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IIT RESEARCH INSTITUTE

FORMERLY ARMOUR RESEARCH FOUNDATION OF ILLINOIS INSTITUTE OF TECHNOLOGY

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ASTRO SCIENCES CENTER

March 16, 1964

UNPUBLISHED PRELIMINARY DATA

Headquarters
National Aeronautics and Space Administration
Office of Space Sciences
Lunar and Planetary Programs
Washington, D. C.

~~N67-80392~~

~~4 pages code 5~~

Attention: Mr. Donald Hearth

Subject: Report No. IITRI W6026-12 (Letter Report)
February 16, 1964 through March 15, 1964.
"Lunar and Planetary Programs Analysis Group"
Contract No. NASr-65(06)

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RESEARCH CONTRACTS

Gentlemen:

The following paragraphs will report on:

1. Work performed
2. Discussions between ASC personnel and NASA personnel
3. Documents submitted
4. ASC Expenditures

1. Work Performed During the Period Under Review

1.1 Scientific Targets

The following reports were revised and will be published in the next reporting period:

- P-1 Scientific Objectives of Deep Space Investigations - Jupiter
- P-2 Scientific Objectives of Deep Space Investigations - Satellites of Jupiter
- P-3 Scientific Objectives of Deep Space Investigations - Comets
- P-4 Scientific Objectives of Deep Space Investigations - Asteroids

Compilation of comet data continued and is expected to be completed during the next reporting period.

2. 1. 1 Subjects Discussed

Spacecraft costing and cost data

2. 2 February 20, 1964 at Goddard

Goddard

ASC

L. Best
K. Foster
G. Ousley

J. E. Beverly
R. S. Vickers

2. 2. 1 Subjects Discussed

Spacecraft costing and cost data

2. 3 February 24, 1964 at JPL

JPL

ASC

E. Baxter
P. Buwalda
P. Hauran
H. Krueger
B. Love
J. Martin
G. E. Nichols, Jr.
S. Rothman

F. Narin
D. L. Roberts
C. A. Stone

2. 3. 1 Subjects Discussed

Review of ASC work for NASA/SL on scientific objectives, mission studies, and trajectories.

Possible comet and asteroid missions.

2. 4 February 25, 1964 at Ames

Ames

ASC

R. Crane
H. Matthews

F. Narin
D. L. Roberts
C. A. Stone

2. 4. 1 Subjects Discussed

Scientific objectives of lunar missions

A draft report on the Scientific Objectives of Mercury was completed and will be reviewed internally in ASC during the next reporting period.

1.2 Mission Profiles and Trajectories

The Asteroid Mission study (Report M-3) and the Jupiter Mission study (Report M-1) have been revised and will be published during the next reporting period.

ASC Report T-5 "Accuracy and Capabilities of the ASC/IITRI Conic Section Trajectory System" was completed and is under internal review in ASC.

Comet trajectory and mission studies are nearing completion and should be submitted for review during the next reporting period.

Analysis of perturbations on comets indicates that a possible 1972 Atlas-Agena mission to comet Giacobini-Zinner must now be considered very doubtful due to the effects of Jupiter.

Work on accessible regions continued. Work on a "Highlight" version of the Jupiter Mission study was initiated this period. Gravity assisted trajectory work continued.

1.3 Reliability

Report on the evaluation of reliability techniques based on the ASC Jupiter Mission Survey has been revised and should be submitted to NASA during the next reporting period.

1.4 Costing

Data to revise and up-date the ASC/IITRI spacecraft cost model was requested from Jet Propulsion Laboratory and Goddard. A revised cost model will be available at the end of the next reporting period, providing additional data is received.

2. Discussions

2.1 February 19, 1964 at NASA Headquarters - SL

<u>NASA/SL</u>	<u>ASC</u>
A. Edwards	J. E. Beverly
D. Heath	R. S. Vickers
C. Reiff	
D. Tomayko	

2.5 March 12, 1964 at Goddard

Goddard

ASC

J. W. Townsend
and others

D. L. Roberts
R. S. Vickers

2.5.1 Subjects Discussed

Goddard Scientific Symposium on the results of
the Explorer XVIII - IMP mission,

2.6 March 13, 1964 at Goddard

Goddard

ASC

G. W. Ousley

D. L. Roberts
R. S. Vickers

2.6.1 Subjects Discussed

Spacecraft costing data

3. Documents Submitted

Draft copies for review and approval: Report T-4
"Summary of One Way Ballistic Trajectory Data:
Earth to Solar System Targets," and

"Scientific Objectives of Deep Space Investigations:
Interplanetary Space Beyond One Astronomical Unit,"
Report No. P-5

4. ASC Expenditures

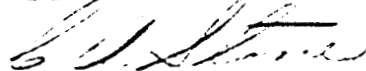
ASC expenditures on Contract No. NASr-65(06) during the
calendar month of February 1964 were \$36,841. The unexpended
balance as of March 1, 1964 was \$272,815.

It is hoped that the above report meets with your approval.
Should there be any questions, please do not hesitate to contact us.

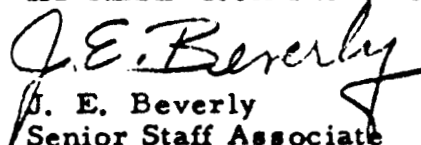
Respectfully submitted,

IIT RESEARCH INSTITUTE

APPROVED:



C. A. Stone, Assistant Director
Astro Sciences Center



J. E. Beverly
Senior Staff Associate

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